

**567—117.8(455B,455D) Beneficial uses of waste tires.**

**117.8(1) *Role of the department.*** In order to ensure that all approved uses of whole or processed waste tires do not pose a threat to the environment or to the public health, welfare, and safety, the department shall have the authority to determine if a proposed use of waste tires is beneficial and shall have the authority to approve or deny applications if such a benefit is not evident. Proposed beneficial uses in which the primary purpose of the project is as a land disposal mechanism shall not be approved.

**117.8(2) *Waste tire products exempted.*** The following end uses of materials derived, processed, or recycled from waste tires shall be considered beneficial reuses under this chapter and shall not require individual beneficial use designations from the department for their use at a specific site of end use.

- a. Asphalt rubber, including asphalt cement modified with a crumb rubber modifier;
- b. Buffing rubber, defined as high quality tire rubber, which is a by-product from the conditioning of tire casings in preparation for retreading;
- c. Carbon black derived from the thermal or oxidative decomposition of tires;
- d. Crumb rubber material, including rubber granules used for soil amendments or surfacing materials for playgrounds, equestrian arenas, and athletic fields;
- e. Crumb rubber modifiers used in asphalt paving materials;
- f. Tire-derived fuel (TDF), which is a fuel derived from waste tires, including whole tires, processed into pieces that satisfy the specifications of the end user for use as either a primary or supplemental fuel. Use of TDF requires modification of air source construction and operation permits if such use is not already recognized in the end user's permit.

**117.8(3) *Beneficial uses for whole waste tires.*** This subrule establishes acceptable beneficial uses for whole waste tires and required notifications and approvals that must be obtained from the department prior to placement of waste tires at the site of end use. The following applications shall be considered acceptable beneficial uses for whole waste tires:

- a. Tire swings, sandboxes, or other equipment for child play areas on residential lots or at schools, care centers, and recreational areas;
- b. Dock bumpers at vehicle loading/unloading docks or marine docks;
- c. Crash barriers at racetracks;
- d. Agricultural uses to hold down covers over hay, silage, and other agricultural commodities. When not in use, the tires should be neatly stacked;
- e. Structures for military and police training at facilities under ownership or management of local, state, or federal agencies;
- f. Artificial fishing reefs and fish habitat structures constructed at facilities under ownership or management of a county conservation board, the department, or a federal agency;
- g. Stream bank erosion control and culvert outlet tire mats, constructed as follows:
  - (1) The tires shall be placed in a single layer and banded together with a noncorrosive strip;
  - (2) All the tires shall be drilled or punctured to allow for outflow of air to prevent their flotation when submerged;
  - (3) The banded mat shall be anchored with cable at least 0.5 inches in diameter;
  - (4) The cables shall then be fastened to buried anchors made of treated timbers or concrete, at least every 50 feet along the top of the mat and intermittently in the middle;
  - (5) The mat shall extend 4 to 6 feet out on the channel bottom;
  - (6) The outermost row on the channel bottom shall be filled with rocks or broken concrete;
  - (7) Vegetation shall be planted in and around the tire mat; rows within the tire mat that are too wet for vegetation establishment shall be filled with rocks or broken concrete; and
  - (8) Any variation from these design standards shall be acceptable only under the direction of an Iowa-licensed professional engineer.
- h. Construction of residential dwelling structures or other buildings for which a building permit has been obtained from local government officials;
- i. Culvert piping made from waste tires with a rim diameter of 21 inches or greater and subject to the following design criteria:

- (1) The maximum depth of water flows within the culvert shall be no greater than 75 percent of the piping diameter;
- (2) Sand or similar aggregate material must be installed in the lower portions of the culvert piping to provide ballast and limit mosquito infestations;
- (3) The culvert must not be installed below the highest seasonal groundwater elevation;
- (4) The maximum depth of earthen or aggregate coverings over the culvert shall not exceed the outside diameter of the whole tires used in the culvert;
- (5) Soils used for backfill around and above the culvert shall be compacted so as to provide a culvert deflection of less than 5 percent of the outside diameter; and
- (6) Vertical sections of tire culvert piping shall be designed with safety measures to prevent unauthorized access by or hazards to children and animals.

**117.8(4) *Required notifications and approval for whole tire uses.*** Prior to the installation or placement of waste tires for a beneficial use as approved in subrule 117.8(3), the owner or operator of the site of end use shall properly notify or seek approval from the department for the proposed beneficial use under the following circumstances. These circumstances apply to the total combined amount of tire material that already is, or is intended to be, used at the site:

*a.* For applications of less than 250 whole waste tires, notification to the department shall not be required, subject to the end user's compliance with all requirements of this chapter.

*b.* For applications of 250 to 500 whole waste tires, the department shall be notified in writing no less than 30 days prior to the construction or placement of waste tires for a beneficial use, with the following information provided:

- (1) The name, address, and telephone number of the owner, operator, or individual responsible for the beneficial use application at the site of end use;
- (2) The address of the site of beneficial end use;
- (3) The estimated total number of tires to be used;
- (4) A description of the beneficial use application;
- (5) A project time line, including proposed project start and end dates; and
- (6) A statement that explains how the site owner shall properly dispose of such waste tires in the event that the beneficial use is discontinued or dismantled.

*c.* For applications of more than 500 waste tires, approval by the department shall be obtained prior to any such applications. Approval requests shall be made to the department in writing and shall contain all information as requested in paragraph 117.8(4) "*b*," as well as a scaled plan of the site of end use with areas noted where whole waste tires are to be placed, including locations of the site of end use property lines and the location of any structures within 300 feet of the site of end use.

**117.8(5) *Prevention of public health risks for whole tire uses.*** All beneficial uses of whole waste tires as approved in this rule shall have incorporated into their design and construction measures to prevent the retention and stagnation of water, in the event that such conditions are likely to exist. These measures shall include, at a minimum, the piercing or drilling of holes in whole waste tires to allow for water drainage. Such measures shall be designed to minimize risks to public health and safety caused by the breeding of disease-carrying insects and rodents.

**117.8(6) *Beneficial uses for shredded waste tires.*** This subrule establishes acceptable beneficial uses for shredded waste tires and required design criteria that shall be observed in the placement of shredded tires at the site of end use. The following applications shall be considered acceptable beneficial uses for shredded waste tires:

*a.* Horizontal drainage structures (French drains) designed to lower the groundwater table and transport excess water to another location or drainage structure and constructed as follows:

- (1) The elevation of the drain outlet must be lower than the average seasonal groundwater table to allow gravity drainage through the drainage structure;
- (2) The drainage structure width shall be no less than 3 feet and no more than 6 feet;
- (3) The minimum depth of shredded tire material in the trench shall be greater than 4 feet;
- (4) The minimum thickness of backfill over the trench shall be 2 feet;
- (5) Headloss of water flowing through the drain shall be due to elevation changes only; and

(6) Any site of end use to contain drainage structures composed of more than 300 cubic yards of shredded tires shall be constructed under the auspices of an Iowa-licensed professional engineer.

*b.* On-site wastewater treatment and disposal system construction, to include use of shredded tires in lateral trenches and as fill to cover distribution pipes under the following conditions:

(1) The on-site wastewater treatment and disposal system is constructed and permitted according to the requirements of 567—Chapter 69;

(2) Shredded tires used in the system have a minimum dimension of 1 inch on any one side and a maximum dimension of 3 inches on any one side; and

(3) The administrative authority responsible for issuance of the permit approves the beneficial use. The authority shall have the sole discretion to deny use of shredded tires in system construction based on any engineering or design principle concerns.

*c.* Lightweight fill in public roads, public road embankment construction, and other public civil engineering applications if all of the following conditions are met:

(1) The tire shreds are of uniform composition and sizing;

(2) The tire shreds are not mixed with other solid wastes, vegetation, composted materials, or other processed tire products, including separated tire bead wire, steel cording or nylon fibers;

(3) The tires are not placed in direct contact with surface water or groundwater;

(4) The shredded tires are isolated from overburden materials by a protective membrane or liner to prevent intrusion and settling of overburden; and

(5) An Iowa-licensed professional engineer designs and supervises the incorporation of shredded tires in beneficial uses of this manner.

*d.* Structural foundation drainage material used in a project as approved through a local building permit;

*e.* A bulking agent for composting operations at permitted composting facilities, with tire shreds used to be no larger than 3 inches on any one side; and

*f.* Leachate drainage medium at a permitted municipal landfill, provided that the medium meets engineering and design requirements for the landfill's operating permit, pursuant to 567—Chapter 102.

**117.8(7) Beneficial uses for baled tires.** This subrule establishes acceptable beneficial uses for baled tires and required notifications and approvals that must be obtained from the department prior to placement of baled tires at the site of end use.

*a. Beneficial uses.* Civil engineering applications, including stream bank and soil erosion control projects, shall be considered acceptable beneficial use applications for baled tires. Such applications involving the combined use of more than 50 cubic yards of baled tires at any one site of end use must be conducted under the immediate direction of one of the following entities:

(1) A federal agency including, but not limited to, the Army Corps of Engineers, the Natural Resources Conservation Service, or the Bureau of Land Management;

(2) A state agency including, but not limited to, the Iowa department of transportation; or

(3) An Iowa-licensed professional engineer.

*b. Required notifications and approval.* Prior to the installation or placement of baled tires for beneficial uses as approved in this rule, the owner or operator of the site of end use shall properly notify or seek approval from the department for the proposed beneficial use under the following circumstances. These circumstances apply to the total combined amount of tire material that already is, or is intended to be, used upon the site:

(1) For applications of less than 25 cubic yards of baled tires at a site of end use, notification to the department shall not be required, subject to the end user's compliance with all requirements of this chapter.

(2) For applications of 25 to 50 cubic yards of baled tires, the department shall be notified in writing no less than 30 days prior to the construction or placement of baled tires for a beneficial use, with the following information provided:

1. The name, address, and telephone number of the owner, operator, or individual responsible for the beneficial use application at the site of end use;

2. The address of the site of beneficial end use;

3. The estimated total number of cubic yards of tires to be used;
4. A description of the beneficial use application;
5. A project time line, including proposed project start and end dates; and
6. A statement that explains how the site owner shall properly dispose of such baled tires in the event that the beneficial use is discontinued or dismantled.

(3) For beneficial use applications of more than 50 cubic yards of baled tires, approval by the department shall be obtained prior to any such applications. Approval requests shall be made to the department in writing and shall contain all information as requested in subparagraph 117.8(7) “b”(2), as well as a scaled plan of the site of end use with areas noted where baled tires are to be placed, including locations of the site of end use property lines, and the location of any structures within 300 feet of the site of end use.

**117.8(8) *Beneficial uses for cut tires.*** This subrule establishes acceptable beneficial uses for cut tires. Notifications and approvals shall not be required by the department prior to the use or placement of cut tires at a site of end use as approved in this rule, so long as such uses have incorporated into their design and construction measures to prevent the retention and stagnation of surface water, in the event that such conditions are likely to exist. Such measures shall be designed to minimize risks to public health and safety caused by the breeding of disease-carrying insects and rodents. The following applications shall be considered acceptable beneficial uses for cut tires:

- a. Agricultural uses to hold down covers over hay, silage, and other agricultural commodities;
- b. Traffic control devices for use in public roadway construction projects;
- c. Portable surfaces manufactured from tire faces or tread;
- d. Silt collection fences manufactured from tire faces or tread; and
- e. Bagel-cut tires used for underturf water conservation and turf growth enhancement systems at golf courses.

**117.8(9) *Requests for approval of other beneficial use designations.*** The department shall have the authority to approve or deny requests for beneficial use applications for whole, shredded, baled, or cut waste tires that are not specifically addressed within this chapter. Requests for such use determinations shall be made to the department in writing. The department may request project descriptions and supporting scientific and engineering data to determine if a request for a beneficial use designation is warranted. The department shall approve or deny a request for approval within 30 days of receipt of such a request and supporting data if so required by the department. The department shall have the sole authority to deny a beneficial use request if the department determines that any one of the following conditions exists:

- a. The requested beneficial use designation poses a risk to the environment or to the public health, welfare, and safety;
- b. The requested beneficial use designation is determined to have the primary purpose as a land disposal mechanism, and any beneficial use would be incidental in nature; or
- c. The requested beneficial use designation would not be in accordance with other applicable federal, state, or local laws, regulations, and ordinances.

**117.8(10) *Compliance with local, state, and federal regulations.*** Any proposed beneficial use project or application of whole, shredded, baled, or cut waste tires may require approval or permits from federal, state, and local agencies, under other laws, regulations, and ordinances, as applicable, including but not limited to the following:

- a. The Army Corps of Engineers, for projects involving navigable waterways and other waterways over which it has jurisdiction;
- b. Waste tire beneficial use applications involving placement on or within land or waters contained within a floodplain which require approval from the department’s floodplain management program, as specified in 567—Chapters 70 through 75; and
- c. Local building codes, zoning and land-use covenants, ordinances, and guidelines.

**117.8(11) *Storage of waste tires prior to beneficial use application.*** Whole, shredded, cut, or baled waste tires to be used for a beneficial use application may be stored at the site of end use, subject to the following requirements:

- a.* Such tire materials shall be stored in piles or bales for no longer than 60 days prior to the date of application, except for whole waste tires for agricultural uses as specified in paragraph 117.8(3)“*d.*”
- b.* All storage of such waste tire materials shall be conducted in accordance with the uniform fire code and the requirements of 117.4(3) and 117.6(4)“*c.*” as applicable.
- c.* Any storage of waste tires associated with a proposed beneficial reuse project at a site of end use for longer than 60 days without implementation of completion of a beneficial reuse project shall be subject to the waste tire storage permitting requirements as contained in rule 567—117.4(455B,455D).